



1725 DeSales Street, NW
Suite 600
Washington, DC 20036
Phone: (202) 429-5609
Fax: (202) 872-0619
Web: www.cmc-ocean.org

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Donna Wieting
Chief, Marine Mammal Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Hwy
Silver Spring, MD 20910-3226

[RE: Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Navy Operations of Surveillance Towed Array Sensor System Low Frequency Active Sonar]

Dear Ms. Wieting,

The Center for Marine Conservation (CMC) appreciates the opportunity to comment on the proposed rule to provide a Letter of Authorization (LOA) to the U.S. Navy for the take of small numbers of marine mammals by harassment incidental to the operations of the Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active Sonar (LFA). CMC opposes the issuance of this LOA on that basis that the U.S. Navy has not fully demonstrated that, given the scope of the proposed project, the vast numbers of marine mammals potentially taken, and the lack of abundance estimates for many of these species, the take will have a negligible impact on the affected species and stocks of marine mammals.

The Navy failed to meet the legal standard and adequately demonstrate that the take will have a negligible impact on the affected species and stocks of marine mammals.

Section 101 (a)(5)(A) of the Marine Mammal Protection Act (MMPA) directs the Secretary of Commerce to allow...the incidental, but not intentional taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region... if the Secretary finds that the taking will be small, have a negligible impact on the species or stock(s) of affected marine mammals, and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses. . .

The regulations define negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival. 50 C.F.R. § 216.103

There are two problems with the National Marine Fisheries Service (NMFS) and the U.S. Navy's preliminary determination that the SURTASS LFA sonar is having no more than a negligible impact on the species or stocks of affected marine mammals. First, the U.S. Navy tested this technology on only three of the more than 48 proposed affected marine mammal

species or stocks. With the exception of some large whale species, **pinnipeds**, and species **found** in the eastern tropical Pacific Ocean, there are still a significant number of cetacean species **that** lack accurate abundance estimates, natural history information, and data on geographic distribution, migratory routes, and calving and breeding grounds. In its application, the U.S. Navy maintains that the incidental take levels are estimated as a percentage of the population (66 FR 15383). However, in many cases there are no accurate population abundance estimates for each of the geographic regions that can be used to calculate **what** percentage of the **population** will be incidentally taken. This is especially true for the beaked whales, which are most vulnerable to this technology, given the strandings that occurred in March 2000 in the Bahamas coincident with Naval operations that employed active sonar technology.

Moreover, the regulations require that the applicant provide the number of marine mammals (by species) that may be taken by each type of taking and the number of times such takings are likely to occur. C.F.R. 216.104 (a)(6). In the *Kokechik Fishermen's Association v. the Secretary of Commerce* (*Kokechik Fishermen's Association v. the Secretary of Commerce*, 339 F.2d 795 (D.C. Cir 1988), cert denied, 488 U.S. 1004 (1989).) the court decision highlighted the flaw about the permit issuing system--lack of sufficient information to be certain that incidental takes would not harm marine mammal stocks. In this case the general permit was legally challenged in the U.S. District Court for the District of Columbia, by the Kokechik Fishermen's Association, representing Alaskan subsistence fishermen; the Center for Environmental Education (CEE),¹ representing numerous environmental organizations; and the Federation. On June 15, 1987 the court preliminarily enjoined the general permit on the grounds that, because the Federation had not met its burden of proof to show that the inevitable take of fur seals would meet MMPA standards, no fishing could be authorized. (*Kokechik Fishermen's Association v. the Secretary of Commerce*, 339 F.2d 795 (D.C. Cir 1988), cert denied, 488 U.S. 1004 (1989).) The Kokechik Fishermen's Association and CEE had successfully demonstrated that the permit would unlawfully allow the taking of one species, Dall's porpoise, even though it was known that other species would be taken by the same fishing operations. (*Kokechik Fishermen's Association v. the Secretary of Commerce*, 339 F.2d 795 (D.C. Cir 1988), cert denied, 488 U.S. 1004 (1989).)

The Federation and the Secretary of Commerce appealed the District Court decision. This decision was upheld by the D.C. Circuit, thereby invalidating the permit and prohibiting the Japanese fleet from operating within U.S. waters (*Kokechik Fishermen's Association v. the Secretary of Commerce*, 339 F.2d 795 (D.C. Cir 1988), cert denied, 488 U.S. 1004 (1989).). Specifically, the Court stated that the Secretary of Commerce has no authority to disregard incidental takings of certain species or stocks without first determining whether or not the population of each species was the OSP level, even if the impact is negligible, in issuing a permit that authorizes the take of another species or stock (*Kokechik Fishermen's Association v. the Secretary of Commerce*, 339 F.2d 795 (D.C. Cir 1988), cert denied, 488 U.S. 1004 (1989)). This meant that NMFS could not issue general permits in the absence of definitive findings that the take of all marine mammals expected to occur in a particular fishery would pass the "will not disadvantage the species" and "consistency with MMPA purposes and policies" tests of section

¹ The Center for Environmental Education changed its name to the Center for Marine Conservation in 1989.

103 (*Kokechik Fishermen's Association v. the Secretary of Commerce*, 839 F.2d 795 (D.C. Cir 1988), cert denied, 488 U.S. 1004 (1989)). This proposed issuance of an LOA for the SURTASS LFA sonar system is a similar situation. Here NMFS is proposing to allow the incidental take of some species of known status and information at the same time as it would authorize the take of other species for which, due to a lack of information, it can not truly make a negligible impact finding. CMC opposes this action because we believe that it contrary to both the court's findings and the MMPA's requirements.

Second, the problem of making a negligible impact finding is further complicated by the fact that the effects of underwater noise on marine mammals are variable and largely unknown for many species. Hearing curves are available for approximately 12 species of marine mammals. Data for cetaceans and sirenians are limited to underwater measures. Pinnipeds data include both air and water measures and are discussed separately. There are to date no published audiometric data for mysticetes. Nevertheless, the acoustic behavior, auditory sensitivity, and frequency range of many marine mammal species are virtually unknown.

The ability to detect sounds of the natural environment is extremely important to marine organisms. Thus, anything that impedes the ability of an animal to detect the normal ambient acoustic environment can have a significant impact on basic life functions, such as finding food or mates, reproducing, caring for offspring, etc. Sublethal, or non-serious injury (to use a term frequently found in the Navy's documents) impacts may ultimately be as devastating as lethal impacts, causing death through impaired foraging or predator detection, but the potential for this type of extended or delayed impact from any sound source is not well understood for any mammal.

Although the U.S. Navy and NMFS maintains that the safety zone surrounding the 180 dB isopleth that encompasses an area of approximately 1 km will be an effective mitigation measure that will reduce potential for non-serious injury and take, this supposition is based on broad, untested generalities and biological risk factors that likely do not apply to all of the proposed affected species. Specifically, the swim speed, interval of course change, angle of course change, dive times, distribution, abundance, and density inputs to the Acoustic Integration Model (AIM) are not site specific. This is especially true of the population estimates for many sites. Finally, it is unrealistic, given the nature of marine mammals to assume that a marine mammal stock or species would be uniformly distributed at a particular depth.

Therefore, NMFS has no choice but to deny the LOA for those species for which the information is lacking and require that the U.S. Navy conduct the research necessary to both accurately estimate the population and determine the potential impacts of the SURTASS LFA sonar on these species of marine mammals.

The Navy's mitigation measures are not risk adverse and will not meet the negligible impact standard.

Throughout its application and the Federal Register notice the Navy relies on **conflicting** standards by which to judge or evaluate its proposed take as negligible, none of which seem to meet the requirements of the MMPA or its implementing regulations. Specifically, Federal Register includes several references to non-serious injury. In one example the Federal Register states that: "Under the Navy proposal, a marine mammal would have to receive one ping greater than, or equal to 180 dB or many pings at a slightly lower RL to potentially incur non-serious injury." 66 FR 15386. The definition of harassment contains two parts as follows 16 U.S.C. 1362 (18):

- (A) The term "harassment" means any act of pursuit, torment, or annoyance which
 - (i) has the potential to injure a marine mammal or marine mammal stock in the wild; or
 - (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.
- (B) The term "Level A harassment" means harassment described in subparagraph (A)(i).
- (C) The term "Level B harassment" means harassment described in subparagraph (B)(i).

Level A harassment makes no reference to either serious or non-serious injury, nor does the MMPA or the regulations implementing the small take exemption-which merely reference **and** define injury or serious injury. The MMPA defines Level A as having the potential to injure, regardless of whether that injury is serious or non-serious. Therefore, to be truly risk adverse and to meet the negligible impact standard the applicant, in this case the Navy, should take all precautions necessary to avoid even the potential for injury as well as the potential to **disturb**.

The most egregious example of changing standards is the Navy's change in the burden of proof for a determination of what **constitutes** Level B harassment and in turn, negligible impact for takes by non-injurious harassment. In its risk analysis the Navy uses as an estimate of the risk to the entire population, a standard that is "a significant disturbance (or disruption) of a biologically important behavior. The addition of the term "significant" is a departure from the definition of level B harassment, which merely states that the harassment has the "potential to disturb marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or Sheltering." The definition makes no mention of level of significance.

In addition, the Navy further limited its analyses by selecting only feeding and breeding as biologically important activities. Again this is a departure from the list of behavioral patterns included in the definition of level B harassment.

As stated in the Federal Register, the application, and the Overseas Environmental Impact Statement and Environmental Impact Statement (OEIS/EIS), the U.S. Navy's has focused its research on the effects of the SURTASS LFA sonar signals on three marine mammal **species**—blue, fin, and humpback whales. The studies conducted on the humpback whales demonstrated **both** avoidance responses and changes in vocalizations/songs. This information is sufficient to demonstrate that the LFA sonar operation has the potential to disrupt the behavior of humpback whales and, therefore, meets the MMPA's definition of Level B harassment.

The results of the Navy's modeling clearly demonstrate that there is the potential for a significant disturbance of a biologically important behavior. Consequently, despite NMFS's assertion that the Navy's projected incidental harassment levels are overestimates because only two vessels will be operational in the early period of the proposed regulations, CMC maintains that they are actually underestimates due to the Navy's illegal interpretation of the definition of harassment. By modifying of the definition of harassment through its selection of risk assessment criteria, the Navy significantly raised the standard (and the burden of proof) for determining when behavioral changes qualified as Level B harassment. If the Navy had adopted risk assessment criteria more in line with the MMPA definition of harassment, rather than raising the burden of proof as it has in its draft OEIS/EIS, CMC believes that the level of incidental harassment would be significantly higher and would no longer meet the standard of negligible impact.

In addition, the Navy also adopts the least conservative acoustic **RLs** standard to avoid extended biologically significant responses. The Navy determined that there was a 2.5 percent value of a risk of an animal incurring a disruption of biologically important behavior at an SPL of 150 **dB**, a 50 percent risk at 165 **dB**, and a 95 percent risk at 180 **db**. This means that at 180 **dB**, there is a 95% chance that marine mammals coming into contact with this source will change their behavior. CMC believes that this is hardly risk adverse or precautionary. In fact CMC believes that the Navy should be considering SPL under 150 **db** as a more appropriate standard to ensure that the LFA sonar was indeed having a negligible impact on marine mammal species and stocks. This proposal is supported by the literature where it has been noted that singing humpback whales may stop singing or alter their songs in the presence of LFA sonar (Tyack, 1998 and Tyack and Clark, 1998) at estimated received levels of 120-150 **dB re 1 mPa**. In another study, Miller et al. (2000) examined songs to determine if changes occurred in song structure during exposure to LFA. On average, the songs were 29% longer in duration when LFA sonar was present than before or after the LFA sonar was present (Miller et al. 2000). Tyack and Clark (1998) projected LFA sonar using variable intensities and locations to test the behaviors of migrating gray whales. Most whales avoided exposure to received levels of 140 **dB** or more when the source was in their path. At a source level of 170 **dB**, the gray whales significantly altered their paths around the source by several hundred meters. When the source level was increased to 185 **dB**, the gray whales exhibited strong avoidance and changed course to avoid passing within a kilometer of the source on both the onshore and the offshore sides. While there was a great deal of individual variability in the changes to the songs in response to the LFA sound source and variability in response related to the location of the LFA sound source in the gray whale study, a precautionary approach would dedicate the selection of both a lower **RL** and **risk** assessment standard.

From the stand point of taking by Level A harassment CMC believes that the mitigation measures adopted are not risk adverse and will therefore, not meet the negligible impact standard. NMFS and the Navy maintain that the 180 dB isopleth, SURTASS LFA sonar mitigation zone is the proposed safety zone that will prevent, to the greatest extent practicable, both permanent threshold shifts and temporary hearing impairment (termed temporary threshold shifts (TTS)) to marine mammals (66 FR 15380). NMFS also states that its scientists and other scientists are in general agreement that TTS is not an injury (i.e. Level A Harassment) and that

This assertion directly conflicts with the National Research Council's recommendation that "The definition of Level A acoustic harassment should be related magnitude of the TTS." (NRC, 2000). Because scientists have noted that a range of only 15 to 20 dB may exist between the onset of TTS and the onset of PTS.. (66 FR 15386) NMFS should both modify the definition of Level A acoustic harassment to include TTS and reduce intensity of the sound field to something much less than 180 dB.

Based on the NRC Report, it is CMC's position that a TTS constitutes injury and PTS constitutes serious injury and may even result in mortality. estimates of percentages of marine mammal stocks affected by injury (listed in Tables 4.2-10 of the OEIS/EIS) would, in actuality, be percentages of marine mammal stocks affected by *serious* injury. Scientists at a 1995 NMFS workshop to develop guidelines for marine mammal stock assessments stated: "Biological significance is measured in terms of the impact such mortality has on the affected stock of marine mammals. An insignificant level of mortality is a level that has a negligible impact on the affected stock." The workshop participants agreed that "mortality and serious injury incidental to fishing operations would be insignificant to a stock of marine mammals if such mortality and injury were only a small portion (e.g. 10% of the PBR [Potential Biological Removal Level]) of the affected stock." The workshop participants agreed that at that level the fisheries related mortality and serious injury would be negligible. (NOAA 1995.) Therefore, CMC using this standard for serious injury related to the SURTASS LFA, where negligible impact would be measured by a quantitative benchmark equal to 10% of the PBR, NMFS would likely find several cases where negligible impact could not be calculated due to insufficient data or would actually be exceeded (i.e. blue whales).

Finally, CMC questions why the Navy has proposed a more precautionary safety zone for human divers of 145 dB re 1 microPa. For some species of marine mammals, their hearing at these low frequencies is more sensitive and acute than human hearing. Why then is the Navy not proposing the same standard for whales as they are for humans, who are less sensitive to this frequency? This double standard, while it may be precautionary for humans, hardly seems so for whales, nor will it (for the reasons outlined above) likely result in negligible impact for marine mammal stocks.

NMFS and Navy's Proposed Monitoring System will likely not achieve its target objective as modeled in the OEIS/EIS.

The Navy monitoring system supposes almost perfect conditions-good visibility to visually detect marine mammals, vocalizing animals that can be detected via the passive acoustic system and nearly 100% effectiveness of its High Frequency Marine Mammal Monitoring (Sonar). But in reality marine mammals dive for long periods of time, do not constantly vocalize, and vary in their ability to be detected. The Navy's proposal to conduct operations during night hours and in high seas will further erode the proposed effectiveness of its monitoring system. Therefore, CMC believes that the Navy should rerun its Acoustic Integration Model (AIM) simulations using varying effectiveness estimates for its monitoring program. In doing so, the Navy will simulate more realistic conditions and will ultimately improve its estimates of the percentages of marine mammal stocks potentially affected by the SURTASS

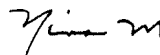
Conclusion

CMC opposes the issuance of this LOA on that basis that the U.S. Navy has not demonstrated that, given the scope of the proposed project, the vast numbers of marine mammals have a negligible impact on the affected species and stocks of marine mammals. CMC's

studies in one limited geographic area, with intense monitoring, and using only those marine mammal stocks for which there are accurate estimates of population abundance, and an understanding of the acoustic behavior, auditory sensitivity, and frequency range of the affected many marine mammal species. further testing of the SURTASS LFA, the Navy must choose a more conservative safety zone intensity level, perhaps one that is more along the lines as that proposed for human divers.

The Navy has played and should continue to play a critical role in increasing our understanding of the effects of underwater sound on marine mammals. magnitude proposed in the Navy's request for an LOA for the SURTASS LFA sonar contains far too many scientific uncertainties, unknowns, and potential biological risks to marine mammals to be authorized under the small take provisions of the MMPA.

Sincerely,



Nina M. Young
Director of Marine Wildlife Conservation